

# TSCA NON-CONFIDENTIAL BUSINESS INFORMATION

DOCUMENT DESCRIPTION

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CAIR

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COMMENTS:

DOES NOT CONTAIN CBI

**Polaroid Corporation**  
1265 Main Street  
Waltham, Massachusetts 02254

6 June 1989



000657776

90-890000229

03 JUL -9 PM 2:53  
03 JUL 1991  
OFFICE

Dear Madam or Sir:

The attached form comprises only those parts of the form which contained the following questions required by the reporting rule of December 22, 1988:

Section 1	All
Section 2	2.04-.09, 2.11-.16
Section 3	All
Section 4	4.01-.05
Section 5	All
Section 6	6.05
Section 7	7.01, 7.03-.06
Section 8	8.01, 8.05-.06, 8.23
Section 9	9.01-.15, 9.19-.20, 9.22
Section 10	10.01-.02, 10.05, 10.08-.16, 10.23

Please do not hesitate to contact me at (617)-684-3102 or the technical contact mentioned in the form if you have any questions concerning this submission.

POLAROID CORPORATION

*Robert C. Brinkley*  
Robert C. Brinkley

Attachment



Form Approved  
OMB No. 2010-0019  
Approval Expires 12-31-89

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Comprehensive Assessment Information Rule  
REPORTING FORM

When completed, send this form to:

Document Processing Center  
Office of Toxic Substances, TS-790  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, DC 20460  
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: \_\_\_\_\_

Document  
Control Number: \_\_\_\_\_

Docket Number: \_\_\_\_\_

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... [1][2] [2][2] [8][8]  
CBI mo. day year

- ☐ a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. .... [0][0][0][5][8][4]-[8][4]-[9]
- b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.
- (i) Chemical name as listed in the rule ..... \_\_\_\_\_
- (ii) Name of mixture as listed in the rule .... \_\_\_\_\_
- (iii) Trade name as listed in the rule ..... \_\_\_\_\_
- c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.
- Name of category as listed in the rule ..... \_\_\_\_\_
- CAS No. of chemical substance ..... [ ][ ][ ][ ][ ][ ]-[ ][ ]-[ ][ ]
- Name of chemical substance ..... \_\_\_\_\_

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

- CBI Manufacturer ..... 1
- ☐ Importer ..... 2
- Processor ..... ③
- X/P manufacturer reporting for customer who is a processor ..... 4
- X/P processor reporting for customer who is a processor ..... 5

☐ Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

☐ Yes ..... ☒ Go to question 1.04

☐ No ..... ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

☐ Yes ..... 1

☐ No ..... ②

b. Check the appropriate box below:

☐ You have chosen to notify your customers of their reporting obligations

Provide the trade name(s) ....

☐ You have chosen to report for your customers

☐ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

☐ Trade name ..... N/A

Is the trade name product a mixture? Circle the appropriate response.

Yes ..... 1

No ..... 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

☐ "I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

Robert T. Hawes  
NAME

Robert T. Hawes  
SIGNATURE

May 24, 1989  
DATE SIGNED

Division Envir Engineer  
TITLE

(617)

684 - 5337  
TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

- 1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You CBI ☐ are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

N/A  
\_\_\_\_\_  
NAME  
\_\_\_\_\_  
TITLE  
\_\_\_\_\_  
( )  
\_\_\_\_\_  
SIGNATURE  
\_\_\_\_\_  
TELEPHONE NO.  
\_\_\_\_\_  
DATE SIGNED  
\_\_\_\_\_  
DATE OF PREVIOUS  
SUBMISSION

- 1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI ☐ "My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

N/A  
\_\_\_\_\_  
NAME  
\_\_\_\_\_  
TITLE  
\_\_\_\_\_  
( )  
\_\_\_\_\_  
SIGNATURE  
\_\_\_\_\_  
TELEPHONE NO.  
\_\_\_\_\_  
DATE SIGNED

☐ Mark (X) this box if you attach a continuation sheet.

### 1.09 Facility Identification

[A][S][S][O][N][E][I][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]  
City

State Zip

Dun & Bradstreet Number .....[0][0]-[1][3][4]-[4][3][7][3]  
EPA ID Number .....[0][0][0][8][4][6][4][9][3]  
Employer ID Number .....[1][4][7][3][4][6][5][5]  
Primary Standard Industrial Classification (SIC) Code .....[3][8][6][1]  
Other SIC Code .....[N][7][A][ ]  
Other SIC Code .....[N][7][A][ ]

### 1.10 Company Headquarters Identification

CBI    Name   [P][O][L][A][R][O][I][D]\_ \_[C][O][R][P][O][R][A][T][I][O][N]\_ \_  
[ ] Address   [5][4][9]\_ \_[T][E][C][H][N][O][L][O][G][Y]\_ \_[S][Q][U][A][R][E]\_ \_  
                                Street

[C][A][M][B][R][I][D][G][E] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
City

State      Zip

Dun & Bradstreet Number .....(0)(0)-(1)(3)(4)-(4)(3)(7)(3)

Employer ID Number .....(1)(4)(7)(3)(4)(6)(5)(5)

☐ Mark (X) this box if you attach a continuation sheet.

### 1.11 Parent Company Identification

[illegible]

### 1.12 Technical Contact

CBI    Name   [R][O][B][E][R][T]\_ \_ \_[H][A][W][E][S]\_ \_ \_  
          Title [D][I][V][I][S][I][O][N]\_ \_ \_[E][N][V][I][R][O][N][M][E][N][T][A][L]\_ \_ \_[F][I][N][G]  
          Address [1][2][6][5]\_ \_ \_[M][A][I][N]\_ \_ \_[S][T]\_ \_ \_- \_ \_[W][6]-[2][A]\_ \_ \_  
   Street  
                        [W][A][S][H][I][N][G][T][O][N]\_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_  
   City  
                                     [M][A]      [0][2][2][5][4]--[\_][\_][\_]  
   State                          Zip  
 Telephone Number .....[\_][\_][\_]-[\_][\_]-[\_][\_]

1.13 This reporting year is from .....  $\begin{bmatrix} 0 & 1 \end{bmatrix}$   $\begin{bmatrix} 8 & 8 \end{bmatrix}$  to  $\begin{bmatrix} 1 & 2 \end{bmatrix}$   $\begin{bmatrix} 8 & 8 \end{bmatrix}$   
Mo. Year Mo. Year

☐ Mark (X) this box if you attach a continuation sheet.



1.14 Facility Acquired -- If you purchased this facility during the reporting year, provide the following information about the seller:

[illegible][illegible]

City

     --  
State                  Zip

Employer ID Number .....( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )

Date of Sale ..... [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
Mo. Day Year

[illegible]

Telephone Number ..... ( ) ( ) ( ) - ( ) ( ) ( ) - ( ) ( ) ( ) ( )

1.15 Facility Sold -- If you sold this facility during the reporting year, provide the following information about the buyer:

CBI    Name of Buyer   [N][I]A[ ]  
                                [ ]

[illegible]

City

**[ ][ ]**      **[ ][ ][ ][ ][ ]--[ ][ ][ ][ ]**  
**State**                      **Zip**

Employer ID Number .....( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )

Date of Purchase ..... [ ] [ ] [ ] [ ] [ ] [ ]  
Mo. Day Year

[illegible]

Telephone Number .....[ ] [ ] [ ] - [ ] [ ] [ ] - [ ] [ ] [ ] [ ]

☐ Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

☐

Classification

Quantity (kg/yr)

Manufactured ..... NA

Imported ..... NA

Processed (include quantity repackaged) ..... 11,150

Of that quantity manufactured or imported, report that quantity:

In storage at the beginning of the reporting year ..... NA

For on-site use or processing ..... NA

For direct commercial distribution (including export) ..... NA

In storage at the end of the reporting year ..... NA

Of that quantity processed, report that quantity:

In storage at the beginning of the reporting year ..... 0

Processed as a reactant (chemical producer) ..... 11,150

Processed as a formulation component (mixture producer) ..... NA

Processed as an article component (article producer) ..... NA

Repackaged (including export) ..... NA

In storage at the end of the reporting year ..... 0

☐ Mark (X) this box if you attach a continuation sheet.



2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

☐ Year ending ..... [1][2] [8][7]  
Mo. Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 4781.4 kg

Year ending ..... [1][2] [8][6]  
Mo. Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 1597 kg

Year ending ..... [1][2] [8][5]  
Mo. Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 3558.5 kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

**N/A**

☐ Continuous process ..... 1

Semicontinuous process ..... 2

Batch process ..... 3

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

☐

Continuous process ..... 1

Semicontinuous process ..... 2

Batch process ..... 3

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

CBI

~~NA~~ - BATCH

☐

Manufacturing capacity ..... kg/yr

Processing capacity ..... kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

CBI

WILL STAY ABOUT THE SAME

☐

	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase	NA	NA	NA
Amount of decrease	NA	NA	NA

☐ Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

☐

Days/Year      Average  
Hours/Day

Process Type #1 (The process type involving the largest quantity of the listed substance.)

Manufactured .....	<u>NA</u>	<u>NA</u>
Processed .....	<u>10 days</u>	<u>20 HRS/day</u>

Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)

Manufactured .....	<u>NA</u>	<u>NA</u>
Processed .....	<u>NA</u>	<u>NA</u>

Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)

Manufactured .....	<u>NA</u>	<u>NA</u>
Processed .....	<u>NA</u>	<u>NA</u>

~~2.10~~ State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

Maximum daily inventory .....	_____	kg
Average monthly inventory .....	_____	kg

☐ Mark (X) this box if you attach a continuation sheet.

- 2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

☐

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity<sup>1</sup></u>	<u>Concentration (%) (specify <math>\pm</math> % precision)</u>	<u>Source of Byproducts, Coproducts, or Impurities</u>
<u>None</u>				

<sup>1</sup>Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct  
C = Coproduct  
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

- 2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to ☐ the instructions for further explanation and an example.)

CBI

a. Product Types <sup>1</sup>	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users <sup>2</sup>
<u>L</u>	<u>100</u>	<u>100</u>	<u>I</u>

<sup>1</sup>Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

<sup>2</sup>Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.



- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types <sup>1</sup>	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users <sup>2</sup>
<u>L</u>	<u>100</u>	<u>100</u>	<u>I</u>

<sup>1</sup>Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

<sup>2</sup>Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product  
 CBI manufactured, imported, or processed at your facility that contains the listed  
 substance other than as an impurity.

☐

a.	b.	c.	d.
Product Type <sup>1</sup>	Final Product's Physical Form <sup>2</sup>	Average % Composition of Listed Substance in Final Product	Type of End-Users <sup>3</sup>
None			

<sup>1</sup>Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

<sup>2</sup>Use the following codes to designate the final product's physical form:

A = Gas	F2 = Crystalline solid
B = Liquid	F3 = Granules
C = Aqueous solution	F4 = Other solid
D = Paste	G = Gel
E = Slurry	H = Other (specify) _____
F1 = Powder	

<sup>3</sup>Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the  
CBI listed substance to off-site customers. *N/A*

☐ Truck ..... 1  
Railcar ..... 2  
Barge, Vessel ..... 3  
Pipeline ..... 4  
Plane ..... 5  
Other (specify) \_\_\_\_\_ 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers  
or prepared by your customers during the reporting year for use under each category  
CBI of end use listed (i-iv). *N/A*

☐

Category of End Use

i. Industrial Products

Chemical or mixture ..... kg/yr

Article ..... kg/yr

ii. Commercial Products

Chemical or mixture ..... kg/yr

Article ..... kg/yr

iii. Consumer Products

Chemical or mixture ..... kg/yr

Article ..... kg/yr

iv. Other

Distribution (excluding export) ..... kg/yr

Export ..... kg/yr

Quantity of substance consumed as reactant ..... kg/yr

Unknown customer uses ..... kg/yr

☐ Mark (X) this box if you attach a continuation sheet.

# SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

## PART A GENERAL DATA

- 3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.  
 CBI The average price is the market value of the product that was traded for the listed substance.

☐

Source of Supply	Quantity (kg)	Average Price (\$/kg)
The listed substance was manufactured on-site.	NA	NA
The listed substance was transferred from a different company site.	NA	NA
The listed substance was purchased directly from a manufacturer or importer.	11,150	\$3.65
The listed substance was purchased from a distributor or repackager.	NA	NA
The listed substance was purchased from a mixture producer.	NA	NA

- 3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

☐

- Truck ..... 1
- Railcar ..... 2
- Barge, Vessel ..... 3
- Pipeline ..... 4
- Plane ..... 5
- Other (specify) ..... 6

☐ Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your  
CBI facility.

☐

Bags ..... 1  
Boxes ..... 2  
Free standing tank cylinders ..... 3  
Tank rail cars ..... 4  
Hopper cars ..... 5  
Tank trucks ..... 6  
Hopper trucks ..... 7  
Drums ..... 8  
Pipeline ..... 9  
Other (specify) ..... 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks. *N/A*

Tank cylinders ..... mmHg  
Tank rail cars ..... mmHg  
Tank trucks ..... mmHg

☐ Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

☐

<u>Trade Name</u>	<u>Supplier or Manufacturer</u>	<u>Average % Composition by Weight (specify <math>\pm</math> % precision)</u>	<u>Amount Processed (kg/yr)</u>
<u>N/A</u>			

☐ Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

☐

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify ± % precision)
Class I chemical	11,150	100 %
	NA	NA
Class II chemical	N/A	
Polymer	N/A	

☐ Mark (X) this box if you attach a continuation sheet.

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## SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

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### General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

---

### PART A PHYSICAL/CHEMICAL DATA SUMMARY

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- 4.01 Specify the percent purity for the three major<sup>1</sup> technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI

[ ]

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	<u>NA</u> % purity	<u>NA</u> % purity	<u>100</u> % purity
Technical grade #2	<u>NA</u> % purity	<u>NA</u> % purity	<u>NA</u> % purity
Technical grade #3	<u>NA</u> % purity	<u>NA</u> % purity	<u>NA</u> % purity

---

<sup>1</sup>Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes ..... (1)

No ..... 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company ..... (1)

Another source ..... 2

---

☒ Mark (X) this box if you attach a continuation sheet.

---



4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes ..... 1  
 No ..... (2)

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

[ ]

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	(3)	4	5
Store	1	2	(3)	4	5
Dispose	1	2	3	4	5
Transport	1	2	3	4	5

[ ] Mark (X) this box if you attach a continuation sheet.

- 4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles  $\geq 10$  microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI



N/A

<u>Physical State</u>		<u>Manufacture</u>	<u>Import</u>	<u>Process</u>	<u>Store</u>	<u>Dispose</u>	<u>Transport</u>
Dust	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____
Powder	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____
Fiber	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____
Aerosol	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

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SECTION 5 ENVIRONMENTAL FATE

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PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

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5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) .... NA (1/M cm) at \_\_\_\_\_ nm  
Reaction quantum yield,  $\phi$  ..... NA at \_\_\_\_\_ nm  
Direct photolysis rate constant,  $k_p$ , at ... NA 1/hr \_\_\_\_\_ latitude

b. Oxidation constants at 25°C:

For  $^1O_2$  (singlet oxygen),  $k_{ox}$  ..... NA 1/M hr  
For  $RO_2$  (peroxy radical),  $k_{ox}$  ..... NA 1/M hr

c. Five-day biochemical oxygen demand,  $BOD_5$  ... NA mg/l

d. Biotransformation rate constant:

For bacterial transformation in water,  $k_b$ ... NA 1/hr  
Specify culture ..... NA

e. Hydrolysis rate constants:

For base-promoted process,  $k_B$  ..... NA 1/M hr  
For acid-promoted process,  $k_A$  ..... NA 1/M hr  
For neutral process,  $k_N$  ..... NA 1/hr

f. Chemical reduction rate (specify conditions) NA

g. Other (such as spontaneous degradation) ... NA

---

☐ Mark (X) this box if you attach a continuation sheet.

---

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

<u>Media</u>	<u>Half-life (specify units)</u>
Groundwater	<u>NA</u>
Atmosphere	<u>NA</u>
Surface water	<u>NA</u>
Soil	<u>NA</u>

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>	<u>Media</u>
<u>NA</u>			in
			in
			in
			in

5.03 Specify the octanol-water partition coefficient,  $K_{ow}$  ... NA at 25°C  
Method of calculation or determination .....

5.04 Specify the soil-water partition coefficient,  $K_d$  ..... NA at 25°C  
Soil type .....

5.05 Specify the organic carbon-water partition coefficient,  $K_{oc}$  ..... NA at 25°C

5.06 Specify the Henry's Law Constant,  $H$  ..... NA atm-m<sup>3</sup>/mole

☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

Bioconcentration Factor

Species

Test<sup>1</sup>

NA

_____	_____	_____
_____	_____	_____
_____	_____	_____

<sup>1</sup>Use the following codes to designate the type of test:

F = Flowthrough

S = Static

☐ Mark (X) this box if you attach a continuation sheet.

~~6.04~~ CBI For each market listed below, state the quantity sold and the total sales value of the listed substance sold or transferred in bulk during the reporting year.

☐

<u>Market</u>	<u>Quantity Sold or Transferred (kg/yr)</u>	<u>Total Sales Value (\$/yr)</u>
Retail sales	_____	_____
Distribution -- Wholesalers	_____	_____
Distribution -- Retailers	_____	_____
Intra-company transfer	_____	_____
Repackagers	_____	_____
Mixture producers	_____	_____
Article producers	_____	_____
Other chemical manufacturers or processors	_____	_____
Exporters	_____	_____
Other (specify)	_____	_____
_____	_____	_____

6.05 CBI Substitutes -- List all known commercially feasible substitutes that you know exist for the listed substance and state the cost of each substitute. A commercially feasible substitute is one which is economically and technologically feasible to use in your current operation, and which results in a final product with comparable performance in its end uses.

☐

<u>Substitute</u>	<u>Cost (\$/kg)</u>
<i>None</i>	_____
_____	_____
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

## SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

### General Instructions:

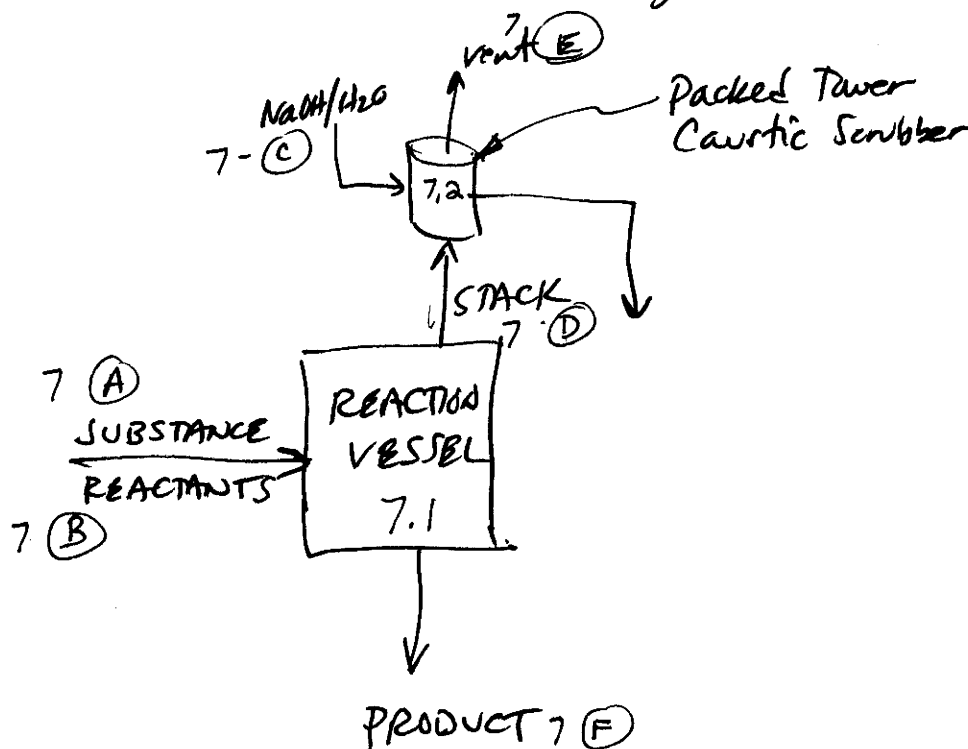
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

### PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

☐ Process type ..... Batch reaction in glass lined vessel

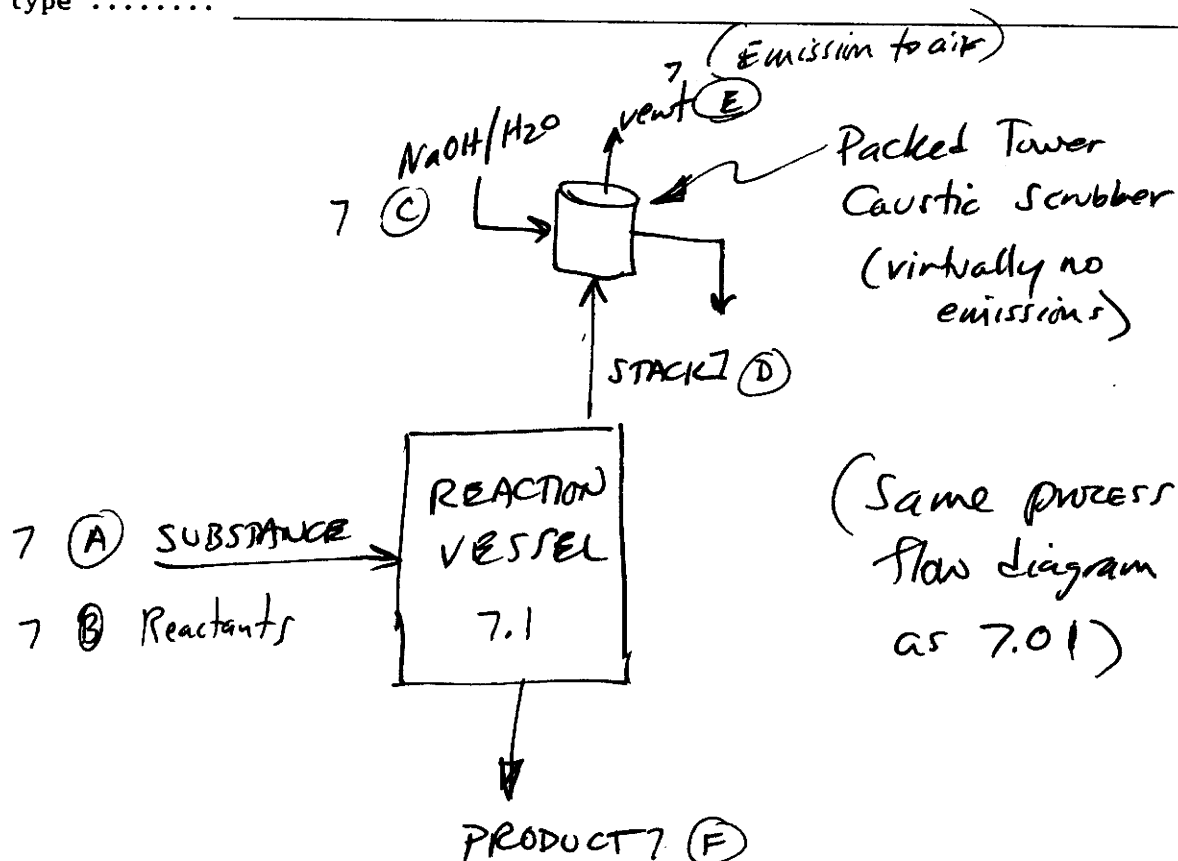


☐ Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type ..... \_\_\_\_\_



☐ Mark (X) this box if you attach a continuation sheet.



7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... \_\_\_\_\_

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
<u>7.1</u>	<u>Glass-lined Reactor</u>	<u>25°C-86°C</u>	<u>760</u>	<u>Glass-lined steel</u>
<u>7.2</u>	<u>Packed Tower Scrubber</u>	<u>25°C</u>	<u>760</u>	<u>Fiberglass</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

- 7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Batch Reaction

Process Stream ID Code	Process Stream Description	Physical State <sup>1</sup>	Stream Flow (kg/yr)
<u>1 A</u>	<u>Substance</u>	<u>OL</u>	<u>11,150</u>
<u>1 B</u>	<u>Reactants (glycol polyols)</u>	<u>OL</u>	<u>40,000</u>
<u>1 C</u>	<u>Scrubber liquor</u>	<u>AL</u>	<u>8000</u>
<u>1 D</u>	<u>Stack emissions</u>	<u>GC</u>	<u>negligible</u>
<u>1 E</u>	<u>Vent (emission to air)</u>	<u>GC</u>	<u>"</u>
<u>1 F</u>	<u>Product</u>	<u>OL</u>	<u>50,100</u>

<sup>1</sup>Use the following codes to designate the physical state for each process stream:

GC = Gas (condensable at ambient temperature and pressure)  
 GU = Gas (uncondensable at ambient temperature and pressure)  
 SO = Solid  
 SY = Sludge or slurry  
 AL = Aqueous liquid  
 OL = Organic liquid  
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type .....

a.	b.	c.	d.	e.
Process Stream ID Code	Known Compounds <sup>1</sup>	Concentrations <sup>2,3</sup> (% or ppm)	Other Expected Compounds	Estimated Concentrations (% or ppm)
<u>7A</u>	<u>2,4-Toluene Diisocyanate</u>	<u>A, W</u>	<u>NA</u>	<u>100</u>
<u>7B</u>	<u>Glycol Polyols</u>	<u>A, W</u>	<u>NA</u>	<u>100</u>
<u>7C</u>	<u>Sodium hydroxide</u>	<u>A, V</u>	<u>NA</u>	<u>10-15%</u>
	<u>Water</u>	<u>A, V</u>	<u>NA</u>	<u>85-90%</u>

7.06 continued below

7D 2,4-Toluene Diisocyanate E, W NA 0.73%

7E 2,4 Toluene diisocyanate A, W NA 0.017ppm

7F Synthetic Urethane Polymer A, W NA 97% ±1%

— 2,4 Toluene diisocyanate A, W NA 3% ±1%

☐ Mark (X) this box if you attach a continuation sheet.

7.06 (continued)

<sup>1</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
<u>1</u>	<u>N/A</u>	
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

<sup>2</sup>Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

<sup>3</sup>Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

☐ Mark (X) this box if you attach a continuation sheet.

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SECTION 8 RESIDUAL TREATMENT GENERATION, CHARACTERIZATION, TRANSPORTATION, AND  
MANAGEMENT

---

General Instructions:

For questions 8.04-8.06, provide a separate response for each residual treatment block flow diagram provided in question 8.01, 8.02 or 8.03. Identify the process type from which the information is extracted.

For questions 8.05-8.33, the Stream Identification Codes are those process streams listed in either the Section 7 or Section 8 block flow diagrams which contain residuals for each applicable waste management method.

For questions 8.07-8.33, if residuals are combined before they are handled, list those Stream Identification Codes on the same line.

Questions 8.09-8.33 refer to the waste management activities involving the residuals identified in either the Section 7 or Section 8 block flow diagrams. Not all Stream Identification Codes used in the sample answers (e.g., for the incinerator questions) have corresponding process streams identified in the block flow diagram(s). These Stream Identification codes are for illustrative purposes only.

For questions 8.11-8.33, if you have provided the information requested on one of the EPA Office of Solid Waste surveys listed below within the three years prior to your reporting year, you may submit a copy or reasonable facsimile in lieu of answering those questions which the survey addresses. The applicable surveys are: (1) Hazardous Waste Treatment, Storage, Disposal, and Recycling Survey; (2) Hazardous Waste Generator Survey; or (3) Subtitle D Industrial Facility Mail Survey.

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☐ Mark (X) this box if you attach a continuation sheet.

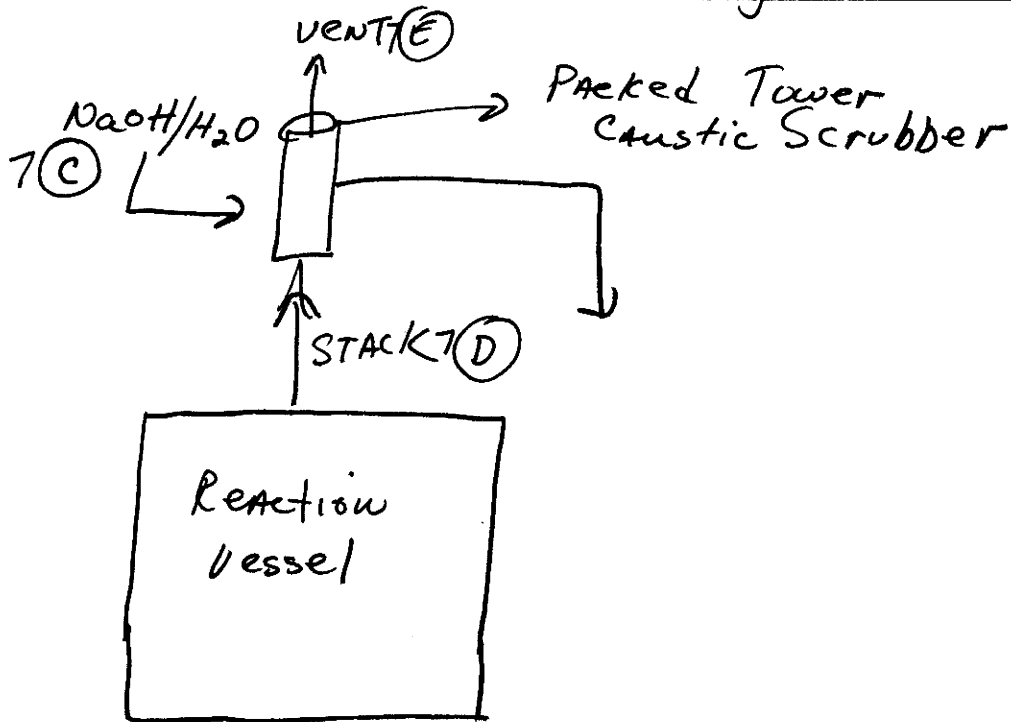
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PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

☐ Process type ..... Batch reaction in glasslined vessel



☐ Mark (X) this box if you attach a continuation sheet.

## PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type .....

[illegible]

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

<sup>1</sup>Use the following codes to designate the type of hazardous waste:

I = Ignitable  
C = Corrosive  
R = Reactive  
E = EP toxic  
T = Toxic  
H = Acutely hazardous

<sup>2</sup>Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)  
GU = Gas (uncondensable at ambient temperature and pressure)  
SO = Solid  
SY = Sludge or slurry  
AL = Aqueous liquid  
OL = Organic liquid  
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

---

8.05 continued below

---

☐ Mark (X) this box if you attach a continuation sheet.

---



8.05 (continued)

<sup>3</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
<u>1</u>	<u>N/A</u>	
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

<sup>4</sup>Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

<sup>5</sup>Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

<sup>6</sup>Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

Code	Method	Detection Limit ( $\pm$ ug/l) /
1	N/A	NA
2	NIOSH Analytical Method No. P+CAM 141	0.1
3		
4		
5		
6		

☐ Mark (X) this box if you attach a continuation sheet.

**CBI**

a.	b.	c.	d.	e.	f.	g.
Stream ID Code	Waste Description Code <sup>1</sup>	Management Method Code <sup>2</sup>	Residual Quantities (kg/yr)	Management of Residual (%) <u>On-Site</u> <u>Off-Site</u>	Costs for Off-Site Management (per kg)	Changes in Management Methods

(2) 7E   B91   M5   0.1   100   0   0   None

<sup>2</sup>Use the codes provided in Exhibit 8-2 to designate the management methods

58

EXHIBIT 8-1.  
(Refers to question 8.06(b))

## WASTE DESCRIPTION CODES

These waste description codes were developed specifically for this survey to supplement the descriptions listed with the RCRA and other waste codes. (These waste description codes are not regulatory definitions.)

### WASTE DESCRIPTION CODES FOR HAZARDOUS WASTE DESCRIBED BY A SINGLE RCRA F, K, P, OR U WASTE CODE

A01 Spent solvent (F001-F005, K086)	A06 Contaminated soil or cleanup residue	A10 Incinerator ash
A02 Other organic liquid (F001-F005, K086)	A07 Other F or K waste, exactly as described*	A11 Solidified treatment residue
A03 Still bottom (F001-F005, K086)	A08 Concentrated off-spec or discarded product	A12 Other treatment residue (specify in "Facility Notes")
A04 Other organic sludge (F001-F005, K086)	A09 Empty containers	A13 Other untreated waste (specify in "Facility Notes")
A05 Wastewater or aqueous mixture		

\*"Exactly as described" means that the waste matches the description of the RCRA waste code.

**INORGANIC LIQUIDS**—Waste that is primarily inorganic and highly fluid (e.g., aqueous), with low suspended inorganic solids and low organic content.

- B01 Aqueous waste with low solvents
- B02 Aqueous waste with low other toxic organics
- B03 Spent acid with metals
- B04 Spent acid without metals
- B05 Acidic aqueous waste
- B06 Caustic solution with metals but no cyanides
- B07 Caustic solution with metals and cyanides
- B08 Caustic solution with cyanides but no metals
- B09 Spent caustic
- B10 Caustic aqueous waste
- B11 Aqueous waste with reactive sulfides
- B12 Aqueous waste with other reactives (e.g., explosives)
- B13 Other aqueous waste with high dissolved solids
- B14 Other aqueous waste with low dissolved solids
- B15 Scrubber water
- B16 Leachate
- B17 Waste liquid mercury
- B18 Other inorganic liquid (specify in "Facility Notes")

**INORGANIC SLUDGES**—Waste that is primarily inorganic, with moderate-to-high water content and low organic content; pumpable.

- B19 Lime sludge without metals
- B20 Lime sludge with metals/metal hydroxide sludge
- B21 Wastewater treatment sludge with toxic organics
- B22 Other wastewater treatment sludge
- B23 Untreated plating sludge without cyanides
- B24 Untreated plating sludge with cyanides
- B25 Other sludge with cyanides
- B26 Sludge with reactive sulfides
- B27 Sludge with other reactives
- B28 Degreasing sludge with metal scale or filings
- B29 Air pollution control device sludge (e.g., fly ash, wet scrubber sludge)
- B30 Sediment or lagoon dragout contaminated with organics
- B31 Sediment or lagoon dragout contaminated with inorganics only

- B32 Drilling mud
- B33 Asbestos slurry or sludge
- B34 Chloride or other brine sludge
- B35 Other inorganic sludge (specify in "Facility Notes")

**INORGANIC SOLIDS**—Waste that is primarily inorganic and solid, with low organic content and low-to-moderate water content; not pumpable.

- B36 Soil contaminated with organics
- B37 Soil contaminated with inorganics only
- B38 Ash, slag, or other residue from incineration of wastes
- B39 Other "dry" ash, slag, or thermal residue
- B40 "Dry" lime or metal hydroxide solids chemically "fixed"
- B41 "Dry" lime or metal hydroxide solids not "fixed"
- B42 Metal scale, filings, or scrap
- B43 Empty or crushed metal drums or containers
- B44 Batteries or battery parts, casings, cores
- B45 Spent solid filters or adsorbents
- B46 Asbestos solids and debris
- B47 Metal-cyanide salts/chemicals
- B48 Reactive cyanide salts/chemicals
- B49 Reactive sulfide salts/chemicals
- B50 Other reactive salts/chemicals
- B51 Other metal salts/chemicals
- B52 Other waste inorganic chemicals
- B53 Lab packs of old chemicals only
- B54 Lab packs of debris only
- B55 Mixed lab packs
- B56 Other inorganic solids (specify in "Facility Notes")

**INORGANIC GASES**—Waste that is primarily inorganic with a low organic content and is a gas at atmospheric pressure.

- B57 Inorganic gases

**ORGANIC LIQUIDS**—Waste that is primarily organic and is highly fluid, with low inorganic solids content and low-to-moderate water content.

- B58 Concentrated solvent-water solution
- B59 Halogenated (e.g., chlorinated) solvent
- B60 Nonhalogenated solvent

- B61 Halogenated/nonhalogenated solvent mixture
- B62 Oil-water emulsion or mixture
- B63 Waste oil
- B64 Concentrated aqueous solution of other organics
- B65 Concentrated phenolics
- B66 Organic paint, ink, lacquer, or varnish
- B67 Adhesives or epoxies
- B68 Paint thinner or petroleum distillates
- B69 Reactive or polymerizable organic liquid
- B70 Other organic liquid (specify in "Facility Notes")

**ORGANIC SLUDGES**—Waste that is primarily organic, with low-to-moderate inorganic solids content and water content; pumpable.

- B71 Still bottoms of halogenated (e.g., chlorinated) solvents or other organic liquids
- B72 Still bottoms of nonhalogenated solvents or other organic liquids
- B73 Oily sludge
- B74 Organic paint or ink sludge
- B75 Reactive or polymerizable organics
- B76 Resins, tars, or tarry sludge
- B77 Biological treatment sludge
- B78 Sewage or other untreated biological sludge
- B79 Other organic sludge (specify in "Facility Notes")

**ORGANIC SOLIDS**—Waste that is primarily organic and solid, with low-to-moderate inorganic content and water content; not pumpable.

- B80 Halogenated pesticide solid
- B81 Nonhalogenated pesticide solid
- B82 Solid resins or polymerized organics
- B83 Spent carbon
- B84 Reactive organic solid
- B85 Empty fiber or plastic containers
- B86 Lab packs of old chemicals only
- B87 Lab packs of debris only
- B88 Mixed lab packs
- B89 Other halogenated organic solid
- B90 Other nonhalogenated organic solid

**ORGANIC GASES**—Waste that is primarily organic with low-to-moderate inorganic content and is a gas at atmospheric pressure.

- B91 Organic gases

EXHIBIT 8-2.  
(Refers to question 8.06(c))

MANAGEMENT METHODS

- M1 = Discharge to publicly owned  
wastewater treatment works  
M2 = Discharge to surface water under  
NPDES  
M3 = Discharge to off-site, privately  
owned wastewater treatment works  
M4 = Scrubber: a) caustic; b) water;  
c) other  
M5 = Vent to: a) atmosphere; b) flare;  
c) other (specify) \_\_\_\_\_  
M6 = Other (specify) \_\_\_\_\_

TREATMENT AND RECYCLING

Incineration/thermal treatment

- 1I Liquid injection  
2I Rotary or rocking kiln  
3I Rotary kiln with a liquid injection  
unit  
4I Two stage  
5I Fixed hearth  
6I Multiple hearth  
7I Fluidized bed  
8I Infrared  
9I Fume/vapor  
10I Pyrolytic destructor  
11I Other incineration/thermal  
treatment

Reuse as fuel

- 1RF Cement kiln  
2RF Aggregate kiln  
3RF Asphalt kiln  
4RF Other kiln  
5RF Blast furnace  
6RF Sulfur recovery furnace  
7RF Smelting, melting, or refining  
furnace  
8RF Coke oven  
9RF Other industrial furnace  
10RF Industrial boiler  
11RF Utility boiler  
12RF Process heater  
13RF Other reuse as fuel unit

Fuel Blending

- 1FB Fuel blending

Solidification

- 1S Cement or cement/silicate processes  
2S Pozzolanic processes  
3S Asphaltic processes  
4S Thermoplastic techniques  
5S Organic polymer techniques  
6S Jacketing (macro-encapsulation)  
7S Other solidification

Recovery of solvents and liquid organics  
for reuse

- 1SR Fractionation  
2SR Batch still distillation  
3SR Solvent extraction  
4SR Thin-film evaporation  
5SR Filtration  
6SR Phase separation  
7SR Dessication  
8SR Other solvent recovery

Recovery of metals

- 1MR Activated carbon (for metals  
recovery)  
2MR Electrodialysis (for metals  
recovery)  
3MR Electrolytic metal recovery  
4MR Ion exchange (for metals recovery)  
5MR Reverse osmosis (for metals  
recovery)  
6MR Solvent extraction (for metals  
recovery)  
7MR Ultrafiltration (for metals  
recovery)  
8MR Other metals recovery

Wastewater Treatment

After each wastewater treatment type  
listed below (1WT - 66WT) specify  
a) tank; or b) surface impoundment  
(i.e., 63WTa)

Equalization

- 1WT Equalization

Cyanide oxidation

- 2WT Alkaline chlorination  
3WT Ozone  
4WT Electrochemical  
5WT Other cyanide oxidation

General oxidation (including  
disinfection)

- 6WT Chlorination  
7WT Ozonation  
8WT UV radiation  
9WT Other general oxidation

Chemical precipitation<sup>1</sup>

- 10WT Lime  
11WT Sodium hydroxide  
12WT Soda ash  
13WT Sulfide  
14WT Other chemical precipitation

Chromium reduction

- 15WT Sodium bisulfite  
16WT Sulfur dioxide

## EXHIBIT 8-2. (continued)

### MANAGEMENT METHODS

17WT Ferrous sulfate	48WT Coalescing plate separation
18WT Other chromium reduction	49WT Other oil skimming
Complexed metals treatment (other than chemical precipitation by pH adjustment)	Other liquid phase separation
19WT Complexed metals treatment	50WT Decanting
	51WT Other liquid phase separation
Emulsion breaking	Biological treatment
20WT Thermal	52WT Activated sludge
21WT Chemical	53WT Fixed film-trickling filter
22WT Other emulsion breaking	54WT Fixed film-rotating contactor
	55WT Lagoon or basin, aerated
Adsorption	56WT Lagoon, facultative
23WT Carbon adsorption	57WT Anaerobic
24WT Ion exchange	58WT Other biological treatment
25WT Resin adsorption	
26WT Other adsorption	Other wastewater treatment
	59WT Wet air oxidation
Stripping	60WT Neutralization
27WT Air stripping	61WT Nitrification
28WT Steam stripping	62WT Denitrification
29WT Other stripping	63WT Flocculation and/or coagulation
	64WT Settling (clarification)
Evaporation	65WT Reverse osmosis
30WT Thermal	66WT Other wastewater treatment
31WT Solar	
32WT Vapor recompression	<b>OTHER WASTE TREATMENT</b>
33WT Other evaporation	1TR Other treatment
	2TR Other recovery for reuse
Filtration	<b>ACCUMULATION</b>
34WT Diatomaceous earth	1A Containers
35WT Sand	2A Tanks
36WT Multimedia	
37WT Other filtration	<b>STORAGE</b>
Sludge dewatering	1ST Container (i.e., barrel, drum)
38WT Gravity thickening	2ST Tank
39WT Vacuum filtration	3ST Waste pile
40WT Pressure filtration (belt, plate and frame, or leaf)	4ST Surface impoundment
41WT Centrifuge	5ST Other storage
42WT Other sludge dewatering	
Air flotation	<b>DISPOSAL</b>
43WT Dissolved air flotation	1D Landfill
44WT Partial aeration	2D Land treatment
45WT Air dispersion	3D Surface impoundment (to be closed as a landfill)
46WT Other air flotation	4D Underground injection well
Oil skimming	
47WT Gravity separation	

---

<sup>1</sup> Chemical precipitation is a treatment operation whereby the pH of a waste is adjusted to the range necessary for removal (precipitation) of contaminants. However, if the pH is adjusted solely to achieve a neutral pH, THE OPERATION SHOULD BE CONSIDERED NEUTRALIZATION (60WT).

~~8.22~~ Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

☐

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1						
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes ..... 1

No ..... 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

N/A

☐

Incinerator	Air Pollution Control Device <sup>1</sup>	Types of Emissions Data Available
1		
2		
3		

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes ..... 1

No ..... ②

<sup>1</sup>Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)

E = Electrostatic precipitator

O = Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

---

SECTION 9 WORKER EXPOSURE

---

General Instructions:

Questions 9.03-9.25 apply only to those processes and workers involved in manufacturing or processing the listed substance. Do not include workers involved in residual waste treatment unless they are involved in this treatment process on a regular basis (i.e., exclude maintenance workers, construction workers, etc.).

---

☐ Mark (X) this box if you attach a continuation sheet.

---



# PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

CBI

☐

Data Element	Data are Maintained for:		Year in Which Data Collection Began	Number of Years Records Are Maintained
	Hourly Workers	Salaried Workers		
Date of hire	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
Age at hire	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
Work history of individual before employment at your facility	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
Sex	<u>  X  </u>	<u>  X  </u>	<u>  1972  </u>	<u>Indefinitely</u>
Race	<u>  X  </u>	<u>  X  </u>	<u>  1965  </u>	<u>Indefinitely</u>
Job titles	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
Start date for each job title	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
End date for each job title	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
Work area industrial hygiene monitoring data	<u>  X  </u>	<u>  X  </u>	<u>  1978  </u>	<u>Indefinitely</u>
Personal employee monitoring data	<u>  X  </u>	<u>  X  </u>	<u>  1978  </u>	<u>Indefinitely</u>
Employee medical history	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
Employee smoking history	<u>  X  </u>	<u>  X  </u>	<u>  1965  </u>	<u>Indefinitely</u>
Accident history	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
Retirement date	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
Termination date	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>
Vital status of retirees	<u>  NA  </u>	<u>  NA  </u>	<u>  NA  </u>	<u>  NA  </u>
Cause of death data	<u>  X  </u>	<u>  X  </u>	<u>  1938  </u>	<u>Indefinitely</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

<input type="checkbox"/>		a.	b.	c.	d.	e.
		<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
		Manufacture of the listed substance	Enclosed	<u>NA</u>	<u>NA</u>	<u>NA</u>
			Controlled Release	<u>NA</u>	<u>NA</u>	<u>NA</u>
			Open	<u>NA</u>	<u>NA</u>	<u>NA</u>
		On-site use as reactant	Enclosed	<u>11,150</u>	<u>22</u>	<u>600</u>
			Controlled Release	<u>NA</u>	<u>NA</u>	<u>NA</u>
			Open	<u>NA</u>	<u>NA</u>	<u>NA</u>
		On-site use as nonreactant	Enclosed	<u>NA</u>	<u>NA</u>	<u>NA</u>
			Controlled Release	<u>NA</u>	<u>NA</u>	<u>NA</u>
			Open	<u>NA</u>	<u>NA</u>	<u>NA</u>
		On-site preparation of products	Enclosed	<u>NA</u>	<u>NA</u>	<u>NA</u>
			Controlled Release	<u>NA</u>	<u>NA</u>	<u>NA</u>
			Open	<u>NA</u>	<u>NA</u>	<u>NA</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

A

Technical Supervisor

B

Chemical Process Technician

C

Senior Chemical Processor

D

Chemical Processor

E

Material Handler

F

Analytical Chemist

G

Laboratory Technician

H

I

J

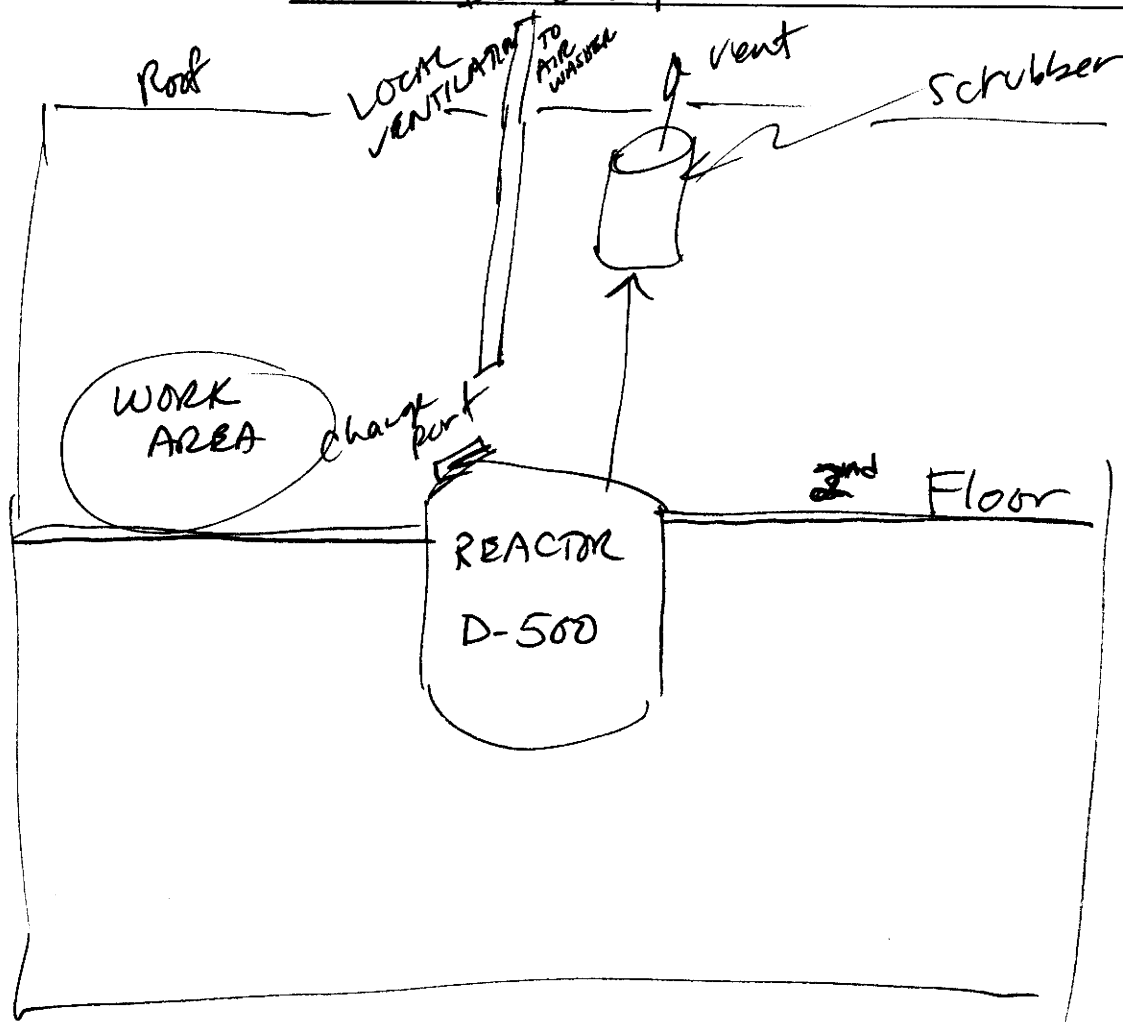
☐ Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

☐ Process type .....

Batch Reaction



☐ Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Batch Reaction Polymerization

Work Area ID

Description of Work Areas and Worker Activities

1

Reactor Area - Charging substance to reactor

2

Reactor Area - Discharging product with residual substance

3

Laboratory - Analyzing substance or product

4

5

6

7

8

9

10

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Batch Reaction Polymerization

Work area ..... Reactor area

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance <sup>1</sup>	Average Length of Exposure Per Day <sup>2</sup>	Number of Days per Year Exposed
<u>A</u>	<u>4</u>	<u>inhalation</u>	<u>OL</u>	<u>A</u>	<u>10</u>
<u>B,C,D</u>	<u>18</u>	<u>inhalation</u>	<u>OL</u>	<u>A</u>	<u>10</u>
<u>E</u>	<u>3</u>	<u>inhalation</u>	<u>OL</u>	<u>A</u>	<u>10</u>

<sup>1</sup>Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)  
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)  
 SO = Solid

SY = Sludge or slurry  
 AL = Aqueous liquid  
 OL = Organic liquid  
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

<sup>2</sup>Use the following codes to designate average length of exposure per day:

A = 15 minutes or less  
 B = Greater than 15 minutes, but not exceeding 1 hour  
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours  
 E = Greater than 4 hours, but not exceeding 8 hours  
 F = Greater than 8 hours

☒ Mark (X) this box if you attach a continuation sheet.

- 9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Batch Reaction Polymerization  
Work area ..... Reactor Area

Labor Category	8-hour TWA Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)	15-Minute Peak Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)
<u>A</u>	<u>none</u>	<u>0.006 - 0.035 ppm</u>
<u>B, C, D</u>	<u>"</u>	
<u>E</u>	<u>none needed</u>	<u>none needed</u>

☒ Mark (X) this box if you attach a continuation sheet.

# PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

[ ]

Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples <sup>1</sup>	Analyzed In-House (Y/N)	Number of Years Records Maintained
Personal breathing zone	1,2	4	2	A	N	Permanent
General work area (air)	1,2	4	2	A	N	Permanent
Wipe samples	NA					
Adhesive patches	NA					
Blood samples	NA					
Urine samples	NA					
Respiratory samples	NA					
Allergy tests	NA					
Other (specify)	NA					
Other (specify)						
Other (specify)						

<sup>1</sup>Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) \_\_\_\_\_

[ ] Mark (X) this box if you attach a continuation sheet.



9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

<input type="checkbox"/> Sample Type	Sampling and Analytical Methodology
<u>Personal</u>	<u>Dräger tubes</u>
<u>Personal</u>	<u>NIOSH Anal. Method No. P+CAM 141</u>
<u>General Work Area</u>	<u>Dräger Tubes</u>
<u>General Work Area</u>	<u>NIOSH Anal. Method No. P+CAM 141</u>

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

CBI

<input type="checkbox"/> Equipment Type <sup>1</sup>	Detection Limit <sup>2</sup>	Manufacturer	Averaging Time (hr)	Model Number
<u>B</u>	<u>0.002 ppm</u>	<u>Dräger</u>	<u>NA</u>	
<u>I</u>	<u>&lt;0.001 ppm</u>	<u>Gillkin (Hi-Flow Sampler)</u>	<u>1 (minimum)</u>	
<u>B</u>	<u>0.002 ppm</u>	<u>Dräger</u>	<u>NA</u>	
<u>I</u>	<u>&lt;0.001 ppm</u>	<u>Gillkin (Hi-Flow Sampler)</u>	<u>1 (minimum)</u>	

<sup>1</sup>Use the following codes to designate personal air monitoring equipment types:

- A = Passive dosimeter
- B = Detector tube
- C = Charcoal filtration tube with pump
- D = Other (specify) \_\_\_\_\_

Use the following codes to designate ambient air monitoring equipment types:

- E = Stationary monitors located within work area
- F = Stationary monitors located within facility
- G = Stationary monitors located at plant boundary
- H = Mobile monitoring equipment (specify) \_\_\_\_\_

I = Other (specify) glass midget impinger

<sup>2</sup>Use the following codes to designate detection limit units:

- A = ppm
- B = Fibers/cubic centimeter (f/cc)
- C = Micrograms/cubic meter (µ/m<sup>3</sup>)

☐ Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

☐

Test Description

Frequency  
(weekly, monthly, yearly, etc.)

Blood and Urine Tests (General)

Yearly

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Batch reaction Polymerization  
 Work area ..... Process area

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>Y</u>	<u>1978</u>	<u>Y</u>	<u>1987</u>
General dilution	<u>Y</u>	<u>1978</u>	<u>N</u>	<u>NA</u>
Other (specify) <u>N/A</u>				
Vessel emission controls	<u>Y</u>	<u>1978</u>	<u>N</u>	<u>NA</u>
Mechanical loading or packaging equipment	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Other (specify) <u>N/A</u>				

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Batch Reaction Polymerization

Work area ..... Process Area

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
<u>None</u>	

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... Batch Reaction Polymerization  
 Work area ..... Reactor Area

Equipment Types	Wear or Use (Y/N)
Respirators *	<u>Y</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>Y</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
<u>NA</u>	

\* When changing substance or drumming product, operators wear either self-contained breathing apparatus (SCBA) or use breathing air (positive pressure) on respirator.

[X] Mark (X) this box if you attach a continuation sheet.

- 9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Batch Reaction Polymerization

Work Area	Respirator Type	Average Usage <sup>1</sup>	Fit Tested (Y/N)	Type of Fit Test <sup>2</sup>	Frequency of Fit Tests (per year)
<u>1</u>	<u>MSA Full Face Respir. w/air</u>	<u>A</u>	<u>Y</u>	<u>QT</u>	<u>1</u>
<u>2</u>	<u>" " " " " "</u>	<u>A</u>	<u>Y</u>	<u>QT</u>	<u>1</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

<sup>1</sup>Use the following codes to designate average usage:

A = Daily  
 B = Weekly  
 C = Monthly  
 D = Once a year  
 E = Other (specify) \_\_\_\_\_

<sup>2</sup>Use the following codes to designate the type of fit test:

QL = Qualitative  
 QT = Quantitative

☐ Mark (X) this box if you attach a continuation sheet.

# PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type ..... Batch Reaction Polymerization

Work area ..... Reaction Area

Restrict entrance to authorized workers  
Worker training on substance and personal protective  
equipment.

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type ..... Batch Reaction Polymerization

Work area ..... Process area

Housekeeping Tasks	Less Than Once Per Day	1-2 Times Per Day	3-4 Times Per Day	More Than 4 Times Per Day
Sweeping	<u>X</u>			
Vacuuming	<u>X</u>			
Water flushing of floors	<u>X</u>			
Other (specify)				
<u>Absorbent and</u> <u>NH<sub>4</sub>OH "Kill Soln."</u>	<u>X</u>			

☒ Mark (X) this box if you attach a continuation sheet.

~~9.21~~ Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Yes ..... 1

No ..... 2

Emergency exposure

Yes ..... 1

No ..... 2

If yes, where are copies of the plan maintained?

Routine exposure: \_\_\_\_\_

Emergency exposure: \_\_\_\_\_

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

Yes ..... (1)

No ..... 2

If yes, where are copies of the plan maintained? In Safety office and in Batch Sheet

Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.

Yes ..... (1)

No ..... 2

~~9.23~~ Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist ..... 1

Insurance carrier ..... 2

OSHA consultant ..... 3

Other (specify) \_\_\_\_\_ 4

[ ] Mark (X) this box if you attach a continuation sheet.



## SECTION 10 ENVIRONMENTAL RELEASE

### General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

### PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

#### CBI

- ☐ Industrial area ..... 1
- Urban area ..... 2
- Residential area ..... 3
- Agricultural area ..... 4
- Rural area ..... 5
- Adjacent to a park or a recreational area ..... 6
- Within 1 mile of a navigable waterway ..... 7
- Within 1 mile of a school, university, hospital, or nursing home facility ..... 8
- Within 1 mile of a non-navigable waterway ..... 9
- Other (specify) \_\_\_\_\_ 10

☐ Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude ..... 41 ° 46 ' 33 "

Longitude ..... 71 ° 26 ' 31 "

UTM coordinates N/A Zone \_\_\_\_\_, Northing \_\_\_\_\_, Easting \_\_\_\_\_

~~10.03~~ If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation ..... inches/year

Predominant wind direction .....

~~10.04~~ Indicate the depth to groundwater below your facility.

Depth to groundwater ..... meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

☐

On-Site Activity

Environmental Release

Air

Water

Land

Manufacturing

NA

NA

NA

Importing

NA

NA

NA

Processing

Y

N

N

Otherwise used

NA

NA

NA

Product or residual storage

N

N

N

Disposal

NA

NA

NA

Transport

N

N

N

☐ Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Batch Reaction Polymerization

<u>Stream ID Code</u>	<u>Control Technology</u>	<u>Percent Efficiency</u>
<u>7D</u>	<u>Caustic/H<sub>2</sub>O Packed Tower Scrubber</u>	<u>95</u>

☐ Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type .....

Batch Reaction Polymerization

Point Source  
ID Code

Description of Emission Point Source

7E

Emission to air from scrubber

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics - - Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

Point Source ID Code	Physical State <sup>1</sup>	Average Emissions (kg/day)	Frequency <sup>2</sup> (days/yr)	Duration <sup>3</sup> (min/day)	Average Emission Factor <sup>4</sup>	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
7E	G	0.010	10	2600	$1.7 \times 10^{-4}$	$1.67 \times 10^{-5}$	10	2600

<sup>1</sup>Use the following codes to designate physical state at the point of release:  
G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) \_\_\_\_\_

<sup>2</sup>Frequency of emission at any level of emission

<sup>3</sup>Duration of emission at any level of emission

<sup>4</sup>Average Emission Factor — Provide estimated ( $\pm 25$  percent) emission factor (kg of emission per kg of production of listed substance)

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m) <sup>1</sup>	Building Width(m) <sup>2</sup>	Vent, Type <sup>3</sup>
<u>7E</u>	<u>43.9</u>	<u>0.152</u>	<u>Ambient</u>	<u>7.62</u>	<u>37.2</u>	<u>22.9</u>	<u>V</u>

<sup>1</sup>Height of attached or adjacent building

<sup>2</sup>Width of attached or adjacent building

<sup>3</sup>Use the following codes to designate vent type:

H = Horizontal

V = Vertical

☐ Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09.  
Photocopy this question and complete it separately for each emission point source.

CBI

☐

Point source ID code .....

N/A

Size Range (microns)

Mass Fraction (%  $\pm$  % precision)

< 1

$\geq 1$  to < 10

$\geq 10$  to < 30

$\geq 30$  to < 50

$\geq 50$  to < 100

$\geq 100$  to < 500

$\geq 500$

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

- 10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

☐

Process type ..... Batch Reaction Polymerization

Percentage of time per year that the listed substance is exposed to this process type ..... 2 %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					Greater than 99%
	Less than 5%	5-10%	11-25%	26-75%	76-99%	
Pump seals <sup>1</sup>						
Packed	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Mechanical	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>
Double mechanical <sup>2</sup>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>
Compressor seals <sup>1</sup>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>
Flanges	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Valves						
Gas <sup>3</sup>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>
Liquid	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Pressure relief devices <sup>4</sup> (Gas or vapor only)	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Sample connections						
Gas	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>
Liquid	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>
Open-ended lines <sup>5</sup> (e.g., purge, vent)						
Gas	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>
Liquid	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>

<sup>1</sup>List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐ Mark (X) this box if you attach a continuation sheet.



10.13 (continued)

<sup>2</sup>If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

<sup>3</sup>Conditions existing in the valve during normal operation

<sup>4</sup>Report all pressure relief devices in service, including those equipped with control devices

<sup>5</sup>Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

☐

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel <sup>1</sup>	c. Control Device	d. Estimated Control Efficiency <sup>2</sup>
1	<5%	Rupture disc	100
1	>99%	Rupture disc	100

<sup>1</sup>Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

<sup>2</sup>The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

☐ Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

N/A

☐ Process type .....

<u>Equipment Type</u>	<u>Leak Detection Concentration (ppm or mg/m<sup>3</sup>) Measured at Inches from Source</u>	<u>Detection Device<sup>1</sup></u>	<u>Frequency of Leak Detection (per year)</u>	<u>Repairs Initiated (days after detection)</u>	<u>Repairs Completed (days after initiated)</u>
Pump seals					
Packed					
Mechanical					
Double mechanical					
Compressor seals					
Flanges					
Valves					
Gas					
Liquid					
Pressure relief devices (gas or vapor only)					
Sample connections					
Gas					
Liquid					
Open-ended lines					
Gas					
Liquid					

<sup>1</sup>Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

0 = Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

- 10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

☐

Vessel Type <sup>1</sup>	Floating Roof <sup>2</sup> Seals <sup>2</sup>	Composition of Stored Materials <sup>3</sup>	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Vessel Volume (l)	Operating Vessel Emission Controls <sup>4</sup>	Design Flow Rate <sup>5</sup>	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate <sup>6</sup>
N/A	-	Drums only											

<sup>1</sup>Use the following codes to designate vessel type:

F = Fixed roof  
 CIF = Contact internal floating roof  
 NCIF = Noncontact internal floating roof  
 EFR = External floating roof  
 P = Pressure vessel (indicate pressure rating)  
 H = Horizontal  
 U = Underground

<sup>2</sup>Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary  
 MS2 = Shoe-mounted secondary  
 MS2R = Rim-mounted, secondary  
 LM1 = Liquid-mounted resilient filled seal, primary  
 LM2 = Rim-mounted shield  
 LMW = Weather shield  
 VM1 = Vapor mounted resilient filled seal, primary  
 VM2 = Rim-mounted secondary  
 VMW = Weather shield

<sup>3</sup>Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

<sup>4</sup>Other than floating roofs

<sup>5</sup>Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

<sup>6</sup>Use the following codes to designate basis for estimate of control efficiency:

C = Calculations  
 S = Sampling

---

PART E NON-ROUTINE RELEASES

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10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

<u>Release</u>	<u>Date Started</u>	<u>Time (am/pm)</u>	<u>Date Stopped</u>	<u>Time (am/pm)</u>
<u>1</u>	<u>None</u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>2</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>3</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>4</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>5</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>6</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

~~10.24~~ Specify the weather conditions at the time of each release.

<u>Release</u>	<u>Wind Speed (km/hr)</u>	<u>Wind Direction</u>	<u>Humidity (%)</u>	<u>Temperature (°C)</u>	<u>Precipitation (Y/N)</u>
<u>1</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>2</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>3</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>4</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>5</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>6</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

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☐ Mark (X) this box if you attach a continuation sheet.

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## APPENDIX I: List of Continuation Sheets

Attach continuation sheets for sections of this form and optional information after this page. In column 1, clearly identify the continuation sheet by listing the question number to which it relates. In column 2, enter the inclusive page numbers of the continuation sheet for each question number.

[illegible]

☐ Mark (X) this box if you attach a continuation sheet.

# MATERIAL SAFETY DATA SHEET

POLAROID CORPORATION OFFICE OF  
HEALTH, SAFETY, & ENVIRONMENTAL AFFAIRS  
1265 MAIN STREET — WALTHAM, MA 02254  
(617) 684-3646

This data sheet is a compilation of available and relevant information, developed for internal use, from literature, vendor, and company sources and is subject to change.

Data Sheet No. 0-587 Revision \_\_\_\_\_  
Compiled By E. Karger Issue Date January 13, 1988

## SECTION I - IDENTIFICATION

Chemical Name - 2,4-diisocyanato-1-methyl-benzene

Polaroid Common Name - 2,4 Toluene diisocyanate (TDI)

Chemical Family - Isocyanate

Formula -  $C_9H_6N_2O_2$

CAS No. - 00584-84-9

Molecular Weight - 174.16

## SECTION II - INGREDIENTS

MATERIAL	%	COMMENTS
	not applicable	

## SECTION III - PHYSICAL DATA

Appearance and Odor: Clear water white to pale yellow liquid, with sharp pungent odor

Warning Properties: Odor threshold - 0.17 ppm

Melting Point: 20°C (71°F)

Boiling Point @ 760 mm Hg: 251°C (484°F)

Specific Gravity (H<sub>2</sub>O=1): 1.22

Solubility in Water @ 20°C: Reacts

Vapor Density (air=1): 6

% Volatiles by volume: Nil

Vapor Pressure mm Hg @ 20°C: 0.04

SECTION IV - FIRE, REACTIVITY & EXPLOSION HAZARD DATA

Flash Point (Tag Closed Cup): 132°C (270°F)

Flammable Limits (Volume % in air) LEL: 0.98% UEL: 9.5%

Recommended Fire Extinguishing Media

Dry Chemical/Carbon Dioxide/Halon

Special/Unusual Fire Fighting Procedures

Do NOT use water.

Hazardous Reactivity

Avoid temperatures above 93°C (200°F).

Compound may polymerize.

This compound reacts with water to form carbon dioxide gas which can cause sealed containers to expand and possibly rupture.

Compound on decomposition may produce oxides of nitrogen, contains approximately 16% nitrogen and traces of hydrogen cyanide (OSHA PEL: 10 ppm).

Compound is incompatible with alcohols, acids, strong bases, metal compounds or surface active materials.

SECTION V - HEALTH HAZARD DATA

Polaroid Exposure Guideline: 0.005 ppm  
STEG: 0.02 ppm

OSHA Permissible Exposure Limit: 0.02 ppm ceil

ACGIH TLV: 0.005 ppm  
STEL: 0.02 ppm

Routes of Exposure and Effects

INHALATION	highly acutely toxic
SKIN CONTACT	severe skin irritant; sensitizer
SKIN ABSORPTION	highly acutely toxic
EYE CONTACT	severe eye irritant
INGESTION	not rated acutely toxic*

\*Reacts with water to yield less toxic product.

Effects of Acute Overexposure: In sensitive individual, produces asthma-like response

Effects of Chronic Overexposure:

Age related loss of respiratory function is accelerated.

In recent NTP toxicity studies, toluene diisocyanate (TDI), when given orally by stomach tube as a concentrated mixture in corn oil, produced tumors in male and female rats and female mice but not male mice. A lifetime inhalation study of TDI in male and female rats and mice produced no tumors.

Based on the oral study cited above, NTP has included TDI in its 1986 carcinogen list. NTP has not considered the inhalation study as evidence that it is not a carcinogen. The International Agency for Research on Cancer (IARC) has concluded that "there is inadequate evidence for the carcinogenicity of toluene diisocyanate to humans, but sufficient evidence for its carcinogenicity to experimental animals".

It is the opinion of Polaroid's toxicologist that the negative results from the lifetime inhalation studies are more appropriate to actual human exposure conditions than the positive results from the oral studies.

Emergency and First Aid Procedures

EYES	In case of eye contact, immediately flush eyes with plenty of water for at least fifteen minutes; seek Medical attention.
SKIN	In case of skin contact, immediately flush affected area with plenty of water for at least fifteen minutes while removing contaminated clothing and shoes; seek Medical attention.
INHALATION	If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably with mechanical respiration or one-way valve face mask. Seek Medical attention immediately.
INGESTION	If swallowed, do <u>not</u> induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Seek Medical attention immediately.

Notes to Physician

Severe asthma-like respiratory symptoms can develop. Has been reported to possess anti-cholinesterase activity.

Bronchial hyper-reaction (bronchorhea is possible). Treat symptomatically.

Recommended Ventilation

Local exhaust ventilation at generation points for vapors.

Personal Protective Equipment

RESPIRATORY	A type C supplied-air respirator with a full facepiece operated in continuous flow mode or other positive pressure mode or with a full facepiece, hood, or helmet operated in continuous flow mode. Self-contained breathing apparatus with a full facepiece operated in pressure demand or other positive pressure mode
EYE	When full facepiece respiratory protection is not required, minimum of chemical workers goggles.
SKIN	Minimum of impervious gloves and impervious garment; full liquid impervious chemical workers suit where risk of exposure is high.



# SECTION VI - SPILL OR DISPOSAL

## Steps to be Taken in Case Material is Released or Spilled

Do not flush contaminated area with water.

Keep open flames and other sources of high heat away.

Before picking up spill, wear the personal protective equipment specified in Section V.

After adding inert absorbing material, sweep and shovel spill into an empty plastic-lined container.

Secure cover on waste container and identify for chemical waste disposal via appropriate corporate procedure.

Do not mix picked-up spills of different chemicals together.

Flush contaminated area with water ONLY AFTER spill has been picked-up; use sufficient water.

EPA Waste Class: Harzardous, toxic, reactive

RCRA NO.: U 223 - if disposed of  
prior to use  
D 003 - if disposed of  
after use

SI #709 Lab. Waste Class: Water reactive

# SECTION VII - LABELING, TRANSPORTATION & STORAGE

Label No.

## DANGER

May Be Fatal If Inhaled or Absorbed Through Skin

CANCER SUSPECT AGENT

Causes Severe Eye and Skin Irritation

May Cause Allergic Respiratory and Skin Reaction

Reacts Violently with Water

Flash Point 132°C (270°F)

## PRECAUTIONARY MEASURES

Do not breathe vapor.

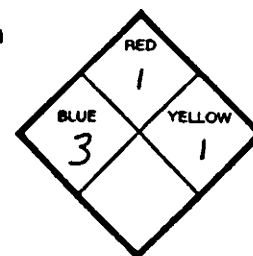
Do not get in eyes, on skin, on clothing.

Drums must not be washed out or used for other purposes.

Use only with adequate ventilation.

Keep container tightly closed.

Wash thoroughly after handling.



First Aid: See Section V

Spill Control: See Section VI

Department of Transportation Requirements

Hazard Class: Poison B

Hazard Label(s): Poison

Proper Shipping Name: Toluene diisocyanate

Identification No.: UN 2078

Polaroid Chemical & Hazardous Material  
Transportation Registry No(s).:

Storage Requirements

Storage temperature: Minimum 4°C (40°F); maximum 32°C (90°F).

Average shelf life is 12 months.

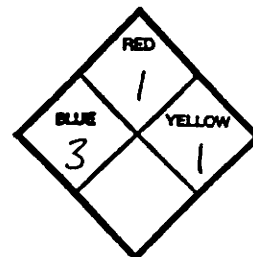
When stored in bulk material must be protected from moisture by supplying a dry, inert atmosphere such as nitrogen.

Label No.

## DANGER

May Be Fatal If Inhaled or Absorbed Through Skin  
CANCER SUSPECT AGENT

Causes Severe Eye and Skin Irritation  
May Cause Allergic Respiratory and Skin Reaction  
Reacts Violently with Water  
Flash Point 132°C (270°F)



## PRECAUTIONARY MEASURES

Do not breathe vapor.  
Do not get in eyes, on skin, on clothing.  
Drums must not be washed out or used for other purposes.  
Use only with adequate ventilation.  
Keep container tightly closed.  
Wash thoroughly after handling.

## First Aid:

In case of eye contact, immediately flush eyes with plenty of water for at least fifteen minutes; seek Medical attention.

In case of skin contact, immediately flush affected area with plenty of water for at least fifteen minutes while removing contaminated clothing and shoes; seek Medical attention.

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably with mechanical respiration or one-way valve face mask. Seek Medical attention immediately.

If swallowed, do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Seek Medical attention immediately.

## Spill Control:

Do not flush contaminated area with water.

Keep open flames and other sources of high heat away.

Before picking up spill, wear the personal protective equipment specified in your area for this material.

After adding inert absorbing material, sweep and shovel spill into an empty plastic-lined container.

Secure cover on waste container and identify for chemical waste disposal via appropriate corporate procedure.

Do not mix picked-up spills of different chemicals together.

Flush contaminated area with water ONLY AFTER spill has been picked-up; use sufficient water.

## Department of Transportation Requirements:

Hazard Class: Poison B

Proper Shipping Name: Toluene diisocyanate

Hazard Label(s): Poison

Identification No.: UN 2078

## PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

- 9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Batch Reaction Polymerization  
Work area ..... Laboratory

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>N</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>Y</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
<u>Exhaust hood</u>	<u>Y</u>
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

## PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

Process type ..... Batch Reaction PolymerizationWork area ..... Laboratory

Worker training, warning signs where tested/  
stored and full utilization of exhaust hoods

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type ..... BATCH REACTION PolymerizationWork area ..... LABORATORY

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u>X</u>			
Vacuuming	<u>X</u>			
Water flushing of floors	<u>X</u>			
Other (specify)				
<u>Absorbents and</u>	<u>X</u>			
<u>"Kill Solu"</u>				

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Batch Reaction Polymerization

Work area ..... Laboratory

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance <sup>1</sup>	Average Length of Exposure Per Day <sup>2</sup>	Number of Days per Year Exposed
<u>F</u>	<u>1</u>	<u>inhalation</u>	<u>OL</u>	<u>A</u>	<u>10</u>
<u>G</u>	<u>2</u>	<u>inhalation</u>	<u>OL</u>	<u>A</u>	<u>10</u>

<sup>1</sup>Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)  
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)  
 SO = Solid

SY = Sludge or slurry  
 AL = Aqueous liquid  
 OL = Organic liquid  
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

<sup>2</sup>Use the following codes to designate average length of exposure per day:

A = 15 minutes or less  
 B = Greater than 15 minutes, but not exceeding 1 hour  
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours  
 E = Greater than 4 hours, but not exceeding 8 hours  
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

- 9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

**CBI**

☐ Process type ..... Batch Reaction Polymerization

Work area ..... Laboratory

[illegible]

☐ Mark (X) this box if you attach a continuation sheet.